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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/362,693	07/29/1999	RANDELL L. MILLS	62-226-9A	7170

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MANELLI DENISON & SELTER  
2000 M STREET NW SUITE 700  
WASHINGTON, DC 20036-3307

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EXAMINER

KALAFUT, STEPHEN J

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 08/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/362,693

Applicant(s)

MILLS, RANDELL L.

Examiner

Steve Kalafut

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1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 March 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 102-205 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 102-205 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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Claims 102-205, for reasons of record, are rejected under 35 U.S.C. 101 because the disclosed invention is inoperative and therefore lacks utility. See paper nos. 3 and 10.

Claims 102-205, for reasons of record, are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. See paper nos. 3 and 10.

Applicant's arguments filed 3/6/03 have been fully considered but they are not persuasive.

Applicant alleges that the various test results, as listed in the paper of 3/6/03 give support for his contention that hydrogen can exist in states lower than the "ground state", where the electron of the hydrogen atom has a fractional, rather than an integer, quantum number. For reasons stated below, these results are not seen as supporting applicant's contention.

Applicant states, on page 4 of the present specification, that the energy states for a hydrogen atom are represented by the formula  $E = -13.6 / (1/p)^2$  eV, where p is an integer, and E is the binding energy of the electron. When p=1, the hydrogen is in its "ground state". When p is 2 or more, hydrogen is allegedly in an energy state below the "ground state", such a hydrogen atom being called a "hydrino". By setting p equal to the integers 1 through 5, the predicted energy values would be -13.6 (1) eV, -13.6 (4) eV, -13.6 (9) eV, -13.6 (16) eV and -13.6 (25) eV. Applicant expresses these values in terms of a variable called q, so that for these five energy

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levels,  $q$  equals 1, 4, 9, 16 and 25. The differences between one level, corresponding to a given value of  $p$ , and the next level may be expressed as  $q$  equaling 3, 5, 7 and 9. Higher values of  $p$  would lead of further higher odd values of  $q$  (11, 13, etc.). The differences between two energy levels, corresponding to a difference in  $p$  of 2, may be expressed as  $q$  equaling 8, 12 and 16. A value of 4 would be possible, going from  $p$  being zero, which would represent an unbound electron, to  $p$  being 2. Thus, applicant's formula predicts emissions of energy corresponding to values of  $q$  equaling 1, 3, 4, 5, 7, 8, 9, 11, 12, 13, 15 and 16. Applicant's data, however, shows  $q$  equaling 1, 2, 3, 4, 6, 7, 8, 9 or 11. Discounting the theoretical values of  $q$  above 11, the data shows  $q$  equaling 2 and 6, which are precluded by applicant's formula, while omitting the predicted value of 5. It is also noted that applicant makes numerous references to  $q$  equaling 2 (corresponding to 27.2 eV), a value which nowhere fits into his formula.

Applicant refers to various results which include the formation of plasmas. A plasma is an ionized gas, which would mean that atoms therein would have electrons removed therefrom, which would be the opposite of hydrino formation. Hydrogen atoms, each having only one electron, would exist in a plasma as dissociated protons and electrons.

Applicant argues that Balmer line broadening provide evidence of hydrinos. This is not persuasive because Balmer line broadening may occur due to turbulence within a plasma or due to its pressure, as taught in the Internet page *Stellar Spectra and the Secrets of Starlight*, page 6. According to the Internet page by Bärman *et al.*, Balmer line broadening may be caused by the degree of ionization within a plasma. Thus, conventional science offers three separate alternative explanations for this phenomenon.

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Applicant refers to a plasma produced by a heated titanium dissociator, which continues for two seconds after all power to the dissociator is terminated, and argues that this would show that a novel chemical power source is present. This phenomenon may be explained in terms of the thermodynamic nature of hydrogen as atoms or as molecules. The most stable elemental form of hydrogen is the dihydrogen molecule ( $H_2$ ). Dissociation of this molecule into hydrogen atoms requires an input of energy, such as the heat provided to the dissociator. Conversely, when hydrogen atoms combine to form  $H_2$ , energy is released. When energy is no longer provided to the dissociator, which inputs sufficient energy to keep the hydrogen in monatomic form, the hydrogen atoms then naturally seek a lower energy state, which is the hydrogen molecule. The discharge which lingers for two seconds after the dissociator power is shut off would thus most likely be the recombination of normal hydrogen atoms into  $H_2$ .

Further evidence against applicant's hydrino theory is shown by the Internet pages by Krieg and Zimmerman. Krieg provides an analysis, using differential calculus, of how the conventionally accepted "ground state" of an electron is a minimum value for its energy. The calculated value of the orbital radius turns out to be the Bohr radius. Zimmerman shows how applicant's theory about the nature of an unbound electron, as found in his book *The Grand Unified Theory of Classical Quantum Mechanics*, starting on page 163, is incorrect. Applicant states that a free electron has the shape of a flat spinning disk, with its spin axis aligned with the direction of its motion. This implies that in an electron beam, pointed in a given direction, all of the electrons would have their axes pointed in that particular direction. In other words, all of the electrons would be polarized in the same direction. However, as Zimmerman explains, electron beams are normally randomly polarized. The implication from applicant's theory, however, is

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that randomly polarized electron beams cannot exist. Thus, while applicant claims that his theory "is based on and demonstrates the proposition that classical physical laws describe reality on all scales" (paper no. 5, page 72), his theory cannot account for the observed reality of randomly polarized electron beams.

Applicant's IDS of 3/11/03, listing previously submitted articles, is noted.

Because of the newly cited articles in support of these rejections, this Office Action will be non-final.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steve Kalafut whose telephone number is 703-308-0433. The examiner can normally be reached on Mon-Fri 8am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan can be reached on 703-308-2383. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

sjk  
August 11, 2003



FORWARDED TO:  
PATENT EXAMINER  
DATE OF  
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